

CHRONOLOGY

History Prior to EPA's Involvement

to: Syntex Verona
 Mod: 007452134
 Date: 17.7/77
 Other: 0751
1960

- 1960 - Hoffman-Toff, Inc. (now Syntex Agribusiness) begins operations at Verona, MO.
- 9/28/61 - H. T. is polluting Spring River. Black sludge is found on bottom of river, foul odor, white moss-like substance.
- 10/25/61- H. T. says it is an old sewer line which drains Empire District basin north of plant. They suspect a broken conduit or tile under one of their ponds. They say that they will install a concrete basin 20'x30'x8' to receive all wastes, agitated evaporator and then burn the sludge or haul to a disposal site.
- 3/25/65 - H. T. is still found to be polluting the Spring River. The discharge is 1/4 mile north of the plant.
- 3/29/65 - H. T. says solid residue being hauled to the Aurora town dump. H. T. studying biological treatment by activated sludge.
- 4/2/65 - Missouri Water Pollution Control Board (WPCB) requests info., analysis, plans, etc., from H.T. by 5/1/65.
- 4/29/65 - H.T. says it is paying a commercial hauler to remove solid material to Aurora town dump.
- 1966 - Northeast Pharmaceutical and Chemical Company (NEPACCO) incorporates.
- 10/30/68- Two fish kills in the area - one attributed to H.T.
- Late 1960's - H.T. produces 2,4,5-trichlorophenoxy-acetic acid as part of Agent Orange production for the U.S. Army.
- 2/69 - H.T. ceases production of 2,4,5-T.
- 12/69 - H.T. (now Syntex) sells 2,4,5-T equipment and leases building to NEPACCO.
- 2/70 - Pilot studies at Syntex, Springfield, Mo., plant on hexachlorophene (HCP) process. They perform dioxin assay.
- 4/70 - NEPACCO begins HCP process at Verona, Mo.
- 3&4/70 - Initial wastes to Rollins-Purle (now Rollins Environmental Services), Baton Rouge, La.
- 5/20/70 - First batch of HCP (1,700 lbs) shipped from Verona.
- 6/10/70 - 6,800 lbs. HCP shipped (4 batches).
- 7/20/70 - NEPACCO notifies FDA that HCP is ready for sampling. NEPACCO states that 2,3,7,8-TCDF in trichlorophenol (TCP) is less than 50 ppb. FDA finds that it is 67 ppb in TCP.
- Fall, 1970 - Spill of toluene at NEPACCO plant.
- 1/21/79 - Visit by Jim Odendahl, representative of Missouri Water Pollution Board. One big concern is seepage and overflow from 3rd and 4th lagoons.



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 SUPERFUND RECORDS

- 1/22/71 - Visit by Darrel Testerman of the Missouri Conservation Commission as a result of complaint by Mr. Davis just downstream on Spring River (complaint centered around white algae material.
- 2/2/71 - Dye tests of chemical power started. Results show leakage in both chemical sewer drains and creek drains under NEPACCO plant.
- 2/5/71 - FDA inspects for second time. It reports that 90,000 lbs. of HCP will be produced monthly in 100 lb. drums under NITINE label. Some shipments have been rejected by NITINE because of impurities.
- FDA reports that RD is in intermediate product and that each batch is composed of about 2,500 lbs. of HCP.
- 2/2/71 - H.T. takes measures to stop seepage and overflows from their lagoons. NEPACCO discharges to H.T. system causing problems because of hexachlorophene and toluene in effluent. No. 4 lagoon cleaned.
- 2/26/71 - Dry choline waste disposal system is in operation in attempt to terminate source of white algae growing in Spring River.
- 3/17/71 - Reinforced 4th lagoon bank to help stop seepage.
- 3/19/71 - NEPACCO vacuum pumps put on closed loop circulation reducing flow by roughly 10 M gallons per day. Since that time we have been able to lower the level in either the 2nd or 3rd lagoons.
- 3/21/71 - NEPACCO fire!
- 3/24/71 - NEPACCO calls Odendahl to report fire and March 21st discovery of algae in Spring River.
- Conservation Commission visits to determine possibility of fish kill from fire residue and Tom Dean of Missouri Geologic Survey contacted to help determine if seepage from lagoons is causing algae growth.
- 3/26/71 - Tom Dean (DNR-Geology) notices black, tarry residue discharge from a fire which NEPACCO had on 3/23/71.
- 3/13/71 - FDA tests for 2,3,7,8-(TCDD) in TCP and finds 67 ppb.
- 2&10/71 - 10,000 gallons of chemical waste removed by Bliss Oil Co.
- 4/11/71 - Anonymous complaint of midnight dumping.
- 4/6/71 - Although previous attempts have been made to pump out 4th lagoon, this date marks start of continuous successful pump-out into 1st and 2nd lagoons.
- 4/29/71 - NEPACCO notifies FDA that 19,000 lb. of HCP is in reactors and states that Conservation Chemical of St. Louis will salvage.
- 4/29/71 - Several projects initiated. Order placed for sewer plant flow meter, individual area manholes, and closed loop circulation on pantoplex vacuum pump.

- 5/4/71 - Visit by Allan Dolph of Missouri WPCB. He identifies the white algae as Sphaerotilus.
- 5/5/71 - Pantoplex vacuum pump put on closed loop circulation reducing flow to sewer by another 2100 gallons/day.
- 5/12/71 - Mo. Department of Health (MDH) notes that NEPACCO is sloppy. Pools of HCP lying around.

NEPACCO has spill. Sludge in nearby creek at 12" deep in spots.

- 5/19/71 - Dye tests conducted to trace lagoon fluids. No conclusive evidence.
- 5/15/71 - A rancher approximately two miles downstream reports a spring running raw sewage.
- 5/16/71 - #2 lagoon practically dried up.
- 5/19/71 - Geologic Survey dyes the 2nd lagoon and inserts charcoal traps above and below suspected seepage along Spring River.
- 5/?/71 - 4th lagoon dried up enough to push bank back by 25 feet.
- 5/26/71 - Started flow back to 2nd lagoon to keep bottom from cracking and for further dye tests.
- 6/71 - Four horse arenas sprayed by Bliss Oil Co.
- 6/1/71 - FDA checks with C.C.C. in St. Louis; no salvage made.
- 6/11/71 - Men of Geologic Survey puts more dye in 2nd lagoon and puts additional charcoal in trap in S.B. Erwin's polluted spring.
- 6/11/79 - S.B. Erwin reports another polluted spring. He requests a tour through plant (along with Joe Crabtree, an adjoining neighbor to Erwin) to investigate rumors of H-T discharging waste through a big open pipe into Spring River. Erwin reports that same day that he is procuring services of a lab in Joplin to analyze for contaminants in his spring.
- 6/15/71 - NEPACCO puts one vacuum pump back on open loop due to inadequate cooling for seal water. Flow increases to lagoons by roughly 1680 gpd.
- 6/19/71 - Manhole project 80% complete; chemical sewer flow can be checked each area.
- 6/22/71 - MDH notes NEPACCO discharging into Syntex sewers. NEPACCO reports to FDA that process material from fire scrapped with 8-9,000 pounds in polylined metal drums.
- 6/23/71 - Meeting of WPCB and H-T to discuss timetable for constructing chemical sewer treatment facilities.
- 7/71 - Drum disposal at Farm #1.
- 6&12/71 - a) Summer engineer now in process of running pilot plant studies to determine best method of recycling propionate wastes; i.e., reduction of another 1700 gpd to sewer plant. Concentration to 20% propionate and running across drum drier is working well - results are promising.

b) Plans are to attempt complete dry-up of in-plant stream, i.e., diversion of spring above plant, dry choline cooling water to cooling tower, equipment jackets on cooling tower, etc.

c) Further analysis of Area VII, VIII, and NEPACCO to determine how much of each input can be segregated and/or recycled.

8/16/71 - H.T. to construct new lined lagoons and plans for treatment system by 9/30/71.

8/16/71 - EPA contacted on pollution in Spring River.

9/1/71 - H.T. effluent measured at C.O.D. at 35,000 mg./l/

9/3/71 - H.T. to cut off NEPACCO effluent into their lagoons effective 9/7/71.

9/9/71 - Letter from Syntex to Mo. WPCB stating that it will no longer be responsible for NEPACCO wastes.

9/15/71 - S.B. Erwin farm, 1-1/2 miles downstream, river polluted.

9/17/71 - NEPACCO wants to discharge 3,000-4,000 gpd to Aurora sewage treatment plant. Effluent has 600#/day, NaCl, Na₂SO₄; 3,000#/day, Glycol; 300 ppm Chlorinated Phenols.

9/20/71 - NEPACCO notifies Mo. WPB that its 6,000 gallon/day waste stream is split into four waste streams: 1) vacuum loop water; 2) organic waste stream; 3) saturated brine solution; 4) general.

3 & 4 will be removed from site. Some will be transferred to Wastewater Technical School, Ft. Crowder, Neosho, Mo. (2,500 gpd in 2.5 mg tank).

9/27/71 - Mo. WPB issues permit for 120 days to spray irrigate 1,000 gal/day on one acre (vacuum loop water) with C.O.D.=410 mg/l., pH 8.1 chlorinated phenols <300 ppm.) NEPACCO has organic wastes, brine solutions (1,000 gpd) and glycols, salts and chlorinated phenols.

9/28/71 - Pollution investigation by Mo. Conserv. Dept. at Spring River on Mr. S. Erwin's farm 1-1/2 miles downstream from Verona.

9/30/71 - Results of sampling from Bruce Williams Lab on 8/26/71, reveal hazardous chemicals in water at two springs (one at S.B. Erwin farm).

10/18/71- Mo. WPB approves irrigation of H.T. waste water on 3 acres at 10,000 gpd.

10/18/71- Analysis results show HCP in H.T. lagoon.

12/71 or 1/10/72 - NEPACCO ceases HCP production.

3/7/72 - Mr. Erwin's spring is much clearer.

9/14/72 - NEPACCO is out of business. Spring River is polluted again one mile north of plant. Lagoon #4 (unlined) suspected to be leaking.

4/17/73 - H.T. wants to dispose of 501,000 gallons of phenols and chlorohydrocarbons.

6/1/73 - H.T. again discharging to property of E.S. Haddock. H.T. says it is coming from old waterworks owned by Empire District Electric Company.

- 3/7/74 - All the grass has been killed in the irrigation of H.T.
- 5/31/74 - H.T. reports spill on 4/29/74.
- 10/23/77- H.T. plans to dam creek flowing across their property and remove the old lagoons.
- 5/22/72 - Representatives of Mo. Dept. of Health and Mo. Geological Survey disapprove City of Aurora's request for landfill at former dump (area is now Baldwin Park).

A USDA Soil Conservation Service Report states:

"Aurora has a serious problem of erosion and sediment from old city dump which is polluting the city water supply. The city dump and old mining area has shafts up to 300 ft. which have received trash and sediment causing pollution. Flooding carries pollutants through the heart of Aurora and the Spring River."

- 9/4/72 - Lagoon #4 is pumped out.
- 9/14/72 - Mo. Clean Water Commission says there is organic contamination in ground water and indicates one source as waste lagoons which are leaking into subsurface.
- 4/11/73 - H-T and Dow Chemical meet with Mo. Clean Water Commission to discuss proposed waste treatment plant.
- 73-74 - Litigation between NEPACCO and Syntex about dismantling HCP equipment.
- 5/29/73 - E.S. Haddock complains that orange precipitate water is escaping from a tile pipe on his property. It is carrying infiltrated waste from buried waste or seepage into sewer lines.
- 7/74 - Center for Disease Control identifies dioxin in soil of horse arenas at 30 ppm.
- 10/2/74 - Letter of Center for Disease Control (CDC) warning Mo. Dept. of Natural Resources (MDNR) about possible chloracne from skin absorption of dioxin.
- 5/16/75 - Dr. Joe Eigner (DNR) discusses lethality of oral dose of dioxin. He states it would be 20-40 drops at levels found (150 lbs. - 750 mg).
- 2/12/75 - Syntex submits dioxin storage and spill plan for 4,600 gallons stored in tank on property.
- 2/14/75 - CDC says tank has 303 to 356 ppm 2,3,7,8-TCDD.
- 8/22/76 - NEPACCO charter forfeited.
- 8/2/78 - EPA notifies Mo. DNR that it finds 2,4-D; 2,4,5-T; but not 2,3,7,8-TCDD in water samples on Syntex property.
- 5/9/79 - Letter of Mr. Ronald E. Layton, Director of Water and Wastewater Technical School, Neosho, Mo., to Jim Odendahl, Dir. MDNR, stating that no dioxin found in waste provided by NEPACCO.

CHRONOLOGY

Actions/Events Since EPA's Involvement

- 10/2/79 - OSHA referral to EPA regarding employee complaints of uncontrolled chemical waste dumping in S.W. Mo.
- 10/11/79 - Matter referred to ARHM.
- 10/12/79 - Action Line telephone conversation with confidential informant on sites. He reveals knowledge that dump truck hauled spilled chemicals to three locations.
- 10/15/79 - Initial meeting of Uncontrolled Hazardous Waste Site Committee. Decision?
- 10/15/79 - Reconnaissance team of Don Harris (SVAN), Kenneth S. Ritchey (ARHM), and Orvis Massey (MDNR) in Verona area to investigate situation.
- 10/16/79 - Recon team interviews anonymous caller and Syntex officials and inspects Syntex chemical dump trench area, lagoon in Lawrence Co. and farm #1 in Barry Co.
- 10/18/79 - Recon team interviews another resident about another possible burial site. Progress report given.
- 10/22-30/79 - Recon team (with Dick Harrington of TAT) remains in field to obtain 22 more interviews.
- 10/23/79 - News article appears in Aurora Advertiser that EPA is looking for dioxin in area.
- 10/25/79 - Similar article appears in Joplin Globe.
- 10/26/79 - Briefing with OSHA.
- 10/29&30/79 - Review of FDA files.
- 10/20/79 - EPA policy staff briefed.
- 11/4/79 - Review of MDH files.
- 11/9/79 - Senators Danforth and Eagleton notified. Cong. Taylor informed.
- 11/9/79 - EPA/MDNR issues news release about three possible uncontrolled dumps which could contain hazardous substances.
- 11/14/79 - Dick Harrington (TAT) and Kenneth S. Ritchey (ARHM) interview Syntex officials
- 11/19/79 - EPA briefs OSHA, FDA, and MDNR officials on progress of investigation.
- 11/21/79 - Meeting of Uncontrolled Hazardous Waste Site Committee. S.W. Mo. sites to receive top priority.
- 12/4/79 - Dan Harris and field team obtain water samples from Empire Electric, the company that provides water to City of Aurora. Team again surveys Baldwin Park.
- 1/7/80 - SVAN takes drum samples from a second farm site in Verona area.

- 1/14/80 - EPA Lab completes analysis of ten water samples from public and private wells and a mine shaft in the Aurora area. Results reveal no detectable dioxin in the water.
- 1/21/80 - SVAN submits draft study plan for farm site #1 in north central Barry County.